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			ART UNIT	PAPER NUMBER
			2462	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/788,729	Applicant(s) CHAKRAVARTY ET AL.	
	Examiner RHONDA MURPHY	Art Unit 2462	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-3, 7, 8, 13, 15, 17, 18, 20-23, 25, 26 and 29 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-3, 7, 8, 13, 15, 17, 18, 20-23, 25, 26 and 29 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.
2. Accordingly, claims 4-6, 9-12, 14, 16, 19, 24, 27, 28 and 30 have been canceled and claims 1-3, 7, 8, 13, 15, 17, 18, 20-23, 25, 26 and 29 are pending.

Response to Arguments

3. Applicant's arguments, see page 10, filed 9/9/11, with respect to the rejections of claims 1, 8, 15, 17, 18, 20, 21 and 26 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground of rejection is made in view of a new prior art reference.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 15 and 17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Paragraph 74 lists examples of computer readable medium and paragraph 90 further states the embodiments do not limit the invention and the implementation of the invention may be varied. The broadest reasonable interpretation of a claim drawn to a computer readable medium (also called

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machine readable medium and other such variations) typically covers forms of non-transitory tangible media and transitory propagating signals *per se* in view of the ordinary and customary meaning of computer readable media, particularly when the specification is silent or can be broadly interpreted as covering both non-transitory and transitory medium. See MPEP 2111.01.

When the broadest reasonable interpretation of a claim covers a signal *per se*, the claim must be rejected under 35 U.S.C. § 101 as covering non-statutory subject matter. See *In re Nuijten*, 500 F.3d 1346, 1356-57 (Fed. Cir. 2007) (transitory embodiments are not directed to statutory subject matter) and *Interim Examination Instructions for Evaluating Subject Matter Eligibility Under 35 USC § 101*, Aug. 24, 2009; p. 2.

A claim drawn to such a computer readable medium that covers both transitory and non-transitory embodiments may be **amended** to narrow the claim to cover only statutory embodiments to avoid a rejection under 35 USC § 101 by adding the limitation "**non-transitory**" to the claim. Cf *Animals - Patentability*, 1077 Off. Gaz. Pat. Office 24 (April 21, 1987)(suggesting that applicants add the limitation "non-human" to a claim covering a multicellular organism to avoid a rejection under 35 USC § 101).

Therefore, it is suggested to amend claims 15 and 17 by replacing "computer-readable" with "**non-transitory** computer-readable."

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 15, 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadaba et al. (US 2002/0172217 A1) in view of Earnshaw et al. (US 2004/0071115 A1).

Regarding claims 1, 15, 18 and 21, Kadaba teaches a method in a wireless communication system, comprising: generating first data to be transmitted from a first transmission terminal (*paragraph 9: each user transmits over the R-SCH*); encoding the first data with a long code at the first transmission terminal to produce a first long-encoded signal (*paragraph 9: each user transmits over the R-SCH using the user's unique long code*).

Kadaba fails to explicitly disclose applying a first polarization to the first long-encoded signal to produce a first long- encoded, polarized signal; and transmitting the first long-encoded, polarized signal from the first transmission terminal to at least one destination, wherein the encoding the first data with the long code at the first transmission terminal comprises utilizing an identical long code also employed by a second transmission terminal transmitting signals having an opposite polarization to the first polarization.

However, Earnshaw teaches applying a first polarization to the first encoded signal to produce a first encoded, polarized signal (*Fig. 4; paragraphs 33-34; polarity P1 encoded by CA*); and transmitting the first encoded, polarized signal from the first transmission terminal to at least one destination (*Fig. 4: user terminal D1 transmits the encoded P1 signal via antenna*), wherein the encoding the first data with the code at the first transmission terminal comprises utilizing an identical code also employed by a second transmission terminal transmitting signals having an opposite polarization to the first polarization (*Fig. 4; paragraphs 33-34: user D1 and user D2 have different polarizations P1 and P2, respectively and both signals associated with user D1 and D2 are uses the same code CA*).

In view of this, it would have been obvious to one skilled in the art at the time the invention was made, to modify Kadaba's system by incorporating the teachings of Earnshaw, so as to minimize interference while increasing utilization of long codes (*Earnshaw: paragraph 26, lines 9-11*).

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8. Claims 2, 3, 7, 22, 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadaba et al. (US 2002/0172217 A1) in view of Earnshaw et al. (US 2004/0071115 A1) as applied to claims 1 and 21 above, and further in view of Proctor, Jr. et al. (US 7,911,993).

Regarding claims 2, 3, 7, 22, 23 and 25, Kadaba and Earnshaw teach the communication method of claim 3, but fail to explicitly disclose applying the first spreading code further comprises applying a first Walsh code, assigned to the first transmission terminal, to generate the first spread signal, wherein the first Walsh code is distinct from a second Walsh code assigned to the second transmission terminal.

However, Proctor Jr. teaches applying the first spreading code further comprises applying a first Walsh code, assigned to the first transmission terminal, to generate the first spread signal, wherein the first Walsh code is distinct from a second Walsh code assigned to the second transmission terminal (*col. 9, lines 20-25 and 38-41 and Fig. 3; Walsh code 413 applied to signal of each user; the users are uniquely identified given that they have been assigned unique orthogonal Walsh codes*).

In view of this, it would have been obvious to one skilled in the art at the time the invention was made, to modify Kadaba's system by incorporating the teachings of Proctor Jr., so as to provide separation between the channels.

9. Claims 8, 17, 20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Earnshaw et al. (US 2004/0071115 A1) in view of Kadaba et al. (US 2002/0172217 A1) and Proctor Jr. et al. (US 7,911,993).

Regarding claims 8, 17, 20 and 26, Earnshaw teaches a method, comprising: receiving a signal, via an antenna (*paragraphs 25-26*); dividing the signal received into a first signal, transmitted from a first transmission terminal, and a second signal, transmitted from a second transmission terminal, wherein the first signal and the second signal have opposite polarizations with respect to one another (*paragraphs 25-26: signals are separated by polarization*); applying an identical code to the first signal and the second signal to generate a first encoded signal and a second encoded signal, respectively (*Fig. 4; paragraphs 33-34: the same code, CA, is applied to both signals associated with user D1 and D2*).

Earnshaw fails to explicitly disclose applying an identical long code to the first signal and the second signal to generate a first decoded signal and a second decoded signal, respectively.

However, Kadaba teaches applying a long code to each user to (*paragraph 9: each user transmits over the R-SCH using the user's unique long code*) and applying a code at a receiver (*paragraph 5*).

In view of this, it would have been obvious to one skilled in the art at the time the invention was made, to modify Earnshaw's system by incorporating the teachings of Kadaba, so as to distinguish users, since applying a long code to the transmission, at a receiver, distinguishes users in CDMA.

Furthermore, it would have been obvious to one skilled in the art at the time the invention was made, to modify Earnshaw's system by decoding the first and second

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signals at the receiver, and apply a long code, for the purpose of distinguishing users in a CDMA system.

Earnshaw fails to explicitly disclose applying a first orthogonal code to the first decoded signal to produce a first output signal corresponding to the first signal transmitted from the first transmission terminal; and applying a second orthogonal code to the second decoded signal to produce a second output signal corresponding to the second signal transmitted from the second transmission terminal.

However, Proctor Jr. teaches applying a first orthogonal code to the first encoded signal to produce a first output signal corresponding to the first signal transmitted from the first transmission terminal (*col. 9, lines 20-25 and 38-41 and Fig. 3; orthogonal Walsh code 413 applied to signal of each user*); and applying a second orthogonal code to the second encoded signal to produce a second output signal corresponding to the second signal transmitted from the second transmission terminal (*col. 9, lines 20-25 and 38-41 and Fig. 3; orthogonal Walsh code 413 applied to signal of each user*).

In view of this, it would have been obvious to one skilled in the art at the time the invention was made, to modify Earnshaw's system by incorporating the teachings of Proctor Jr., so as to provide separation between the channels.

Although Proctor teaches encoding, Proctor fails to explicitly disclose decoding. However, it would have been obvious to one skilled in the art at the time the invention was made to decode the receive signals and apply a Walsh code, so as to distinguish channels in CDMA.

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10. Claims 13 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Earnshaw et al. (US 2004/0071115 A1) in view of Kadaba et al. (US 2002/0172217 A1) and Proctor Jr. et al. (US 7,911,993) as applied to claims 8 and 26 above, and further in view of Iwamoto et al. (US 2005/0213644 A1).

Regarding claims 13 and 29, Kadaba, Earnshaw and Proctor teach the receiver system of claim 8. Proctor further teaches generating a first in-phase signal component and a first quadrature signal component of the first signal (*col. 9, lines 13-15*), but fails to explicitly disclose performing respective pulse shaping operations on the first in-phase signal component and the first quadrature signal component.

However, Iwamoto teaches performing respective pulse shaping operations on the first in-phase signal component and the first quadrature signal component (*Fig. 5; paragraph 57: I and Q signals input to match filters 24-1 and 24-2*).

In view of this, it would have been obvious to one skilled in the art at the time the invention was made, to modify Kadaba, Earnshaw and Proctor, by incorporating the teachings of Iwamoto, for the purpose of shaping the signal to better suit the communication channel.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RHONDA MURPHY whose telephone number is (571)272-3185. The examiner can normally be reached on Monday - Friday 9:00 - 5:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rhonda Murphy/
Examiner, Art Unit 2462

/Kevin C. Harper/
Primary Examiner, Art Unit 2462